



SEQUENCE LISTING

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Aggarwal, Aneel

<120> Methods of Identifying Modulators of Bromodomains

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<141> 2008-03-19

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<151> 2000-02-22

<160> 44

<170> PatentIn version 3.0

<210> 1

<211> 3014

<212> DNA

<213> Homo sapiens

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 <212> PRT
 <213> Homo sapiens

<400> 2

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			20					25					30		
Pro	Pro	Ala	Pro	Pro	Gln	Gly	Ser	Pro	Cys	Ala	Ala	Ala	Ala	Gly	Gly
		35					40					45			
Ser	Gly	Ala	Cys	Gly	Pro	Ala	Thr	Ala	Val	Ala	Ala	Ala	Gly	Thr	Ala
	50					55				60					
Glu	Gly	Pro	Gly	Gly	Gly	Gly	Ser	Ala	Arg	Ile	Ala	Val	Lys	Lys	Ala
65				70						75					80
Gln	Leu	Arg	Ser	Ala	Pro	Arg	Ala	Lys	Lys	Leu	Glu	Lys	Leu	Gly	Val
			85						90					95	
Tyr	Ser	Ala	Cys	Lys	Ala	Glu	Glu	Ser	Cys	Lys	Cys	Asn	Gly	Trp	Lys
			100					105					110		
Asn	Pro	Asn	Pro	Ser	Pro	Thr	Pro	Pro	Arg	Ala	Asp	Leu	Gln	Gln	Ile
		115					120					125			
Ile	Val	Ser	Leu	Thr	Glu	Ser	Cys	Arg	Ser	Cys	Ser	His	Ala	Leu	Ala
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Ala	His	Val	Ser	His	Leu	Glu	Asn	Val	Ser	Glu	Glu	Glu	Met	Asn	Arg
145					150				155						160
Leu	Leu	Gly	Ile	Val	Leu	Asp	Val	Glu	Tyr	Leu	Phe	Thr	Cys	Val	His
			165					170						175	
Lys	Glu	Glu	Asp	Ala	Asp	Thr	Lys	Gln	Val	Tyr	Phe	Tyr	Leu	Phe	Lys
			180					185					190		
Leu	Leu	Arg	Lys	Ser	Ile	Leu	Gln	Arg	Gly	Lys	Pro	Val	Val	Glu	Gly
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Ser	Leu	Glu	Lys	Lys	Pro	Pro	Phe	Glu	Lys	Pro	Ser	Ile	Glu	Gln	Gly
210						215					220				
Val	Asn	Asn	Phe	Val	Gln	Tyr	Lys	Phe	Ser	His	Leu	Pro	Ala	Lys	Glu
225					230					235					240
Arg	Gln	Thr	Ile	Val	Glu	Leu	Ala	Lys	Met	Phe	Leu	Asn	Arg	Ile	Asn
				245					250					255	
Tyr	Trp	His	Leu	Glu	Ala	Pro	Ser	Gln	Arg	Arg	Leu	Arg	Ser	Pro	Asn
			260					265					270		
Asp	Asp	Ile	Ser	Gly	Tyr	Lys	Glu	Asn	Tyr	Thr	Arg	Trp	Leu	Cys	Tyr
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Cys	Asn	Val	Pro	Gln	Phe	Cys	Asp	Ser	Leu	Pro	Arg	Tyr	Glu	Thr	Thr
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Arg	Gln	Leu	Leu	Glu	Gln	Ala	Arg	Gln	Glu	Lys	Asp	Lys	Leu	Pro	Leu
				325					330					335	
Glu	Lys	Arg	Thr	Leu	Ile	Leu	Thr	His	Phe	Pro	Lys	Phe	Leu	Ser	Met
			340					345					350		
Leu	Glu	Glu	Glu	Val	Tyr	Ser	Gln	Asn	Ser	Pro	Ile	Trp	Asp	Gln	Asp
		355					360					365			
Phe	Leu	Ser	Ala	Ser	Ser	Arg	Thr	Ser	Gln	Leu	Gly	Ile	Gln	Thr	Val
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Ile	Asn	Pro	Pro	Pro	Val	Ala	Gly	Thr	Ile	Ser	Tyr	Asn	Ser	Thr	Ser
385					390					395					400
Ser	Ser	Leu	Glu	Gln	Pro	Asn	Ala	Gly	Ser	Ser	Ser	Pro	Ala	Cys	Lys
				405					410					415	
Ala	Ser	Ser	Gly	Leu	Glu	Ala	Asn	Pro	Gly	Glu	Lys	Arg	Lys	Met	Thr
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Asp	Ser	His	Val	Leu	Glu	Glu	Ala	Lys	Lys	Pro	Arg	Val	Met	Gly	Asp
		435					440					445			
Ile	Pro	Met	Glu	Leu	Ile	Asn	Glu	Val	Met	Ser	Thr	Ile	Thr	Asp	Pro
	450					455					460				
Ala	Ala	Met	Leu	Gly	Pro	Glu	Thr	Asn	Phe	Leu	Ser	Ala	His	Ser	Ala
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Arg	Asp	Glu	Ala	Ala	Arg	Leu	Glu	Glu	Arg	Arg	Gly	Val	Ile	Glu	Phe
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His	Val	Val	Gly	Asn	Ser	Leu	Asn	Gln	Lys	Pro	Asn	Lys	Lys	Ile	Leu
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Met	Trp	Leu	Val	Gly	Leu	Gln	Asn	Val	Phe	Ser	His	Gln	Leu	Pro	Arg
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Met Pro Lys Glu Tyr Ile Thr Arg Leu Val Phe Asp Pro Lys His Lys
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 Thr Leu Ala Leu Ile Lys Asp Gly Arg Val Ile Gly Gly Ile Cys Phe
 545 550 555 560
 Arg Met Phe Pro Ser Gln Gly Phe Thr Glu Ile Val Phe Cys Ala Val
 565 570 575
 Thr Ser Asn Glu Gln Val Lys Gly Tyr Gly Thr His Leu Met Asn His
 580 585 590
 Leu Lys Glu Tyr His Ile Lys His Asp Ile Leu Asn Phe Leu Thr Tyr
 595 600 605
 Ala Asp Glu Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly Phe Ser Lys
 610 615 620
 Glu Ile Lys Ile Pro Lys Thr Lys Tyr Val Gly Tyr Ile Lys Asp Tyr
 625 630 635 640
 Glu Gly Ala Thr Leu Met Gly Cys Glu Leu Asn Pro Arg Ile Pro Tyr
 645 650 655
 Thr Glu Phe Ser Val Ile Ile Lys Lys Gln Lys Glu Ile Ile Lys Lys
 660 665 670
 Leu Ile Glu Arg Lys Gln Ala Gln Ile Arg Lys Val Tyr Pro Gly Leu
 675 680 685
 Ser Cys Phe Lys Asp Gly Val Arg Gln Ile Pro Ile Glu Ser Ile Pro
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 Gly Ile Arg Glu Thr Gly Trp Lys Pro Ser Gly Lys Glu Lys Ser Lys
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 Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser Ile Leu
 725 730 735
 Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu Pro Val
 740 745 750
 Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Phe Pro Met
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 Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr Val Ser
 770 775 780
 Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn Cys Lys
 785 790 795 800
 Glu Tyr Asn Ala Ala Glu Ser Glu Tyr Tyr Lys Cys Ala Asn Ile Leu
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 Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly Leu Ile Asp Lys
 820 825 830

<210> 3
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<212> PRT
 <213> Artificial Sequence

 <220>
 <223> synthetic bromodomain peptide

 <220>
 <221> Xaa
 <222> (2)..(4)
 <223> Xaa is a maximum of three amino acids. Each of these can be any amino acid. One may be missing.

 <220>
 <221> Xaa
 <222> (4)..(11)
 <223> Xaa is a maximum of eight amino acids. Each of these can be any amino acid. One, two, or three may be missing.

 <220>
 <221> Xaa
 <222> (5)..(5)
 <223> Xaa is a single amino acid that is either Pro, Lys, or His.

 <220>
 <221> Xaa
 <222> (6)..(6)
 <223> Xaa is any single amino acid.

 <220>
 <221> Xaa
 <222> (8)..(8)
 <223> Xaa is a single amino acid that can be either Tyr, Phe, or His.

 <220>
 <221> Xaa
 <222> (9)..(13)
 <223> Xaa is 5 amino acids. Each of these can be any amino acid.

 <220>
 <221> Xaa
 <222> (11)..(11)
 <223> Xaa is a single amino acid that can be either Met, Ile, or Val.

<400> 3

Phe	Xaa	Pro	Xaa	Xaa	Xaa	Tyr	Xaa	Xaa	Xaa	Xaa	Xaa	Pro	Xaa	Asp
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<210> 4
 <211> 12
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> synthetic bromodomain peptide

<220>
<221> Xaa
<222> (6)..(6)
<223> Xaa represents an acetyl-lysine

<400> 4

Ile Ser Tyr Gly Arg Xaa Lys Arg Arg Gln Arg Arg
1 5 10

<210> 5
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic bromodomain peptide

<220>
<221> Xaa
<222> (8)..(8)
<223> Xaa represents an acetyl lysine.

<400> 5

Ala Arg Lys Ser Thr Gly Gly Xaa Ala Pro Arg Lys Gln Leu
1 5 10

<210> 6
<211> 14
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<213> Artificial Sequence

<220>
<223> synthetic bromodomain peptide

<220>
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<222> (8)..(8)
<223> Xaa represents an acetyl lysine.

<400> 6

Gln Ser Thr Ser Arg His Lys Xaa Leu Met Phe Lys Thr Glu
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<210> 7
<211> 110
<212> PRT
<213> Homo sapiens, bromodomain peptide

<400> 7

Ser Lys Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser
1 5 10 15

Ile Leu Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu
 20 25 30
 Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Ser
 35 40 45
 Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr
 50 55 60
 Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn
 65 70 75 80
 Cys Lys Glu Tyr Asn Ala Pro Glu Ser Glu Tyr Tyr Lys Cys Ala Asn
 85 90 95
 Ile Leu Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly
 100 105 110

<210> 8
 <211> 110
 <212> PRT
 <213> Homo sapiens

<400> 8

Gly Lys Glu Leu Lys Asp Pro Asp Gln Leu Tyr Thr Thr Leu Lys Asn
 1 5 10 15
 Leu Leu Ala Gln Ile Lys Ser His Pro Ser Ala Trp Pro Phe Met Glu
 20 25 30
 Pro Val Lys Lys Ser Glu Ala Pro Asp Tyr Tyr Glu Val Ile Arg Phe
 35 40 45
 Pro Ile Asp Leu Lys Thr Met Thr Glu Arg Leu Arg Ser Arg Tyr Tyr
 50 55 60
 Val Thr Arg Lys Leu Phe Val Ala Asp Leu Gln Arg Val Ile Ala Asn
 65 70 75 80
 Cys Arg Glu Tyr Asn Pro Pro Asp Ser Glu Tyr Cys Arg Cys Ala Ser
 85 90 95
 Ala Leu Glu Lys Phe Phe Tyr Phe Lys Leu Lys Glu Gly Gly
 100 105 110

<210> 9
 <211> 109
 <212> PRT
 <213> Tetrahymena thermophila

<400> 9

Leu Lys Lys Ser Lys Glu Arg Ser Phe Asn Leu Gln Cys Ala Asn Val
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 Ile Glu Asn Met Lys Arg His Lys Gln Ser Trp Pro Phe Leu Asp Pro
 20 25 30

Val Asn Lys Asp Asp Val Pro Asp Tyr Tyr Asp Val Ile Thr Asp Pro
35 40 45

Ile Asp Ile Lys Ala Ile Glu Lys Lys Leu Gln Asn Asn Gln Tyr Val
50 55 60

Asp Lys Asp Gln Phe Ile Lys Asp Val Lys Arg Ile Phe Thr Asn Ala
65 70 75 80

Lys Ile Tyr Asn Gln Pro Asp Thr Ile Tyr Tyr Lys Ala Ala Lys Glu
85 90 95

Leu Glu Asp Phe Val Glu Pro Tyr Leu Thr Lys Leu Lys
100 105

<210> 10
<211> 109
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 10

Ala Gln Arg Pro Lys Arg Gly Pro His Asp Ala Ala Ile Gln Asn Ile
1 5 10 15

Leu Thr Glu Leu Gln Asn His Ala Ala Ala Trp Pro Phe Leu Gln Pro
20 25 30

Val Asn Lys Glu Glu Val Pro Asp Tyr Tyr Asp Phe Ile Lys Glu Pro
35 40 45

Met Asp Leu Ser Thr Met Glu Ile Lys Leu Glu Ser Asn Lys Tyr Gln
50 55 60

Lys Met Glu Asp Phe Ile Tyr Asp Ala Arg Leu Val Phe Asn Asn Cys
65 70 75 80

Arg Met Tyr Asn Gly Glu Asn Thr Ser Tyr Tyr Lys Tyr Ala Asn Arg
85 90 95

Leu Glu Lys Phe Phe Asn Asn Lys Val Lys Glu Ile Pro
100 105

<210> 11
<211> 112
<212> PRT
<213> *Homo sapiens*

<400> 11

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
1 5 10 15

Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
20 25 30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
35 40 45

Lys Ser Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60
 Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Ile Trp Leu Met Phe
 65 70 75 80
 Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Tyr
 85 90 95
 Cys Ser Lys Leu Ser Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
 100 105 110

<210> 12
 <211> 112
 <212> PRT
 <213> Homo sapiens

<400> 12

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
 1 5 10 15
 Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
 20 25 30
 Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
 35 40 45
 Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60
 Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Trp Leu Met Phe
 65 70 75 80
 Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
 85 90 95
 Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
 100 105 110

<210> 13
 <211> 112
 <212> PRT
 <213> Mus musculus

<400> 13

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
 1 5 10 15
 Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
 20 25 30
 Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
 35 40 45
 Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Arg Leu Met Phe
65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
85 90 95

Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
100 105 110

<210> 14

<211> 111

<212> PRT

<213> *Caenorhabditis elegans*

<400> 14

Asp Thr Val Phe Ser Gln Glu Asp Leu Ile Lys Phe Leu Leu Pro Val
1 5 10 15

Trp Glu Lys Leu Asp Lys Ser Glu Asp Ala Ala Pro Phe Arg Val Pro
20 25 30

Val Asp Ala Lys Leu Leu Asn Ile Pro Asp Tyr His Glu Ile Ile Lys
35 40 45

Arg Pro Met Asp Leu Glu Thr Val His Lys Lys Leu Tyr Ala Gly Gln
50 55 60

Tyr Gln Asn Ala Gly Gln Phe Cys Asp Asp Ile Trp Leu Met Leu Asp
65 70 75 80

Asn Ala Trp Leu Tyr Asn Arg Lys Asn Ser Lys Val Tyr Lys Tyr Gly
85 90 95

Leu Lys Leu Ser Glu Met Phe Val Ser Glu Met Asp Pro Val Met
100 105 110

<210> 15

<211> 110

<212> PRT

<213> *Homo sapiens*

<400> 15

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
100 105 110

<210> 16
<211> 110
<212> PRT
<213> Mesocricetus auratus

<400> 16

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
100 105 110

<210> 17
<211> 111
<212> PRT
<213> Homo sapiens

<400> 17

Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
1 5 10 15

Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
35 40 45

Asn Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
65 70 75 80

Asn Ser Val Lys Tyr Asn Gly Pro Glu Ser Gln Tyr Thr Lys Thr Ala
85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
100 105 110

<210> 18
<211> 111
<212> PRT
<213> Mesocricetus auratus

<400> 18

Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
1 5 10 15

Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
35 40 45

Ser Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
65 70 75 80

Asn Ser Val Lys Tyr Asn Gly Ser Glu Ser Gln Tyr Thr Lys Thr Ala
85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
100 105 110

<210> 19
<211> 111
<212> PRT
<213> Homo sapiens

<400> 19

Lys Pro Gly Arg Val Thr Asn Gln Leu Gln Tyr Leu His Lys Val Val
1 5 10 15

Met Lys Ala Leu Trp Lys His Gln Phe Ala Trp Pro Phe Arg Gln Pro
20 25 30

Val Asp Ala Val Lys Leu Gly Leu Pro Asp Tyr His Lys Ile Ile Lys
35 40 45

Gln Pro Met Asp Met Gly Thr Ile Lys Arg Arg Leu Glu Asn Asn Tyr
50 55 60

Tyr Trp Ala Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
65 70 75 80

Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
85 90 95

Gln Thr Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Ser Met Pro
100 105 110

<210> 20
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 20

Lys	Pro	Gly	Arg	Lys	Thr	Asn	Gln	Leu	Gln	Tyr	Met	Gln	Asn	Val	Val
1				5					10					15	
Val	Lys	Thr	Leu	Trp	Lys	His	Gln	Phe	Ala	Trp	Pro	Phe	Tyr	Gln	Pro
			20					25					30		
Val	Asp	Ala	Ile	Lys	Leu	Asn	Leu	Pro	Asp	Tyr	His	Lys	Ile	Ile	Lys
		35					40					45			
Asn	Pro	Met	Asp	Met	Gly	Thr	Ile	Lys	Lys	Arg	Leu	Glu	Asn	Asn	Tyr
		50				55					60				
Tyr	Trp	Ser	Ala	Ser	Glu	Cys	Met	Gln	Asp	Phe	Asn	Thr	Met	Phe	Thr
65					70					75					80
Asn	Cys	Tyr	Ile	Tyr	Asn	Lys	Pro	Thr	Asp	Asp	Ile	Val	Leu	Met	Ala
				85					90					95	
Gln	Ala	Leu	Glu	Lys	Ile	Phe	Leu	Gln	Lys	Val	Ala	Gln	Met	Pro	
			100					105					110		

<210> 21
 <211> 111
 <212> PRT
 <213> Drosophila melanogaster

<400> 21

Arg	Pro	Gly	Arg	Asn	Thr	Asn	Gln	Leu	Gln	Tyr	Leu	Ile	Lys	Thr	Val
1				5					10					15	
Met	Lys	Val	Ile	Trp	Lys	His	His	Phe	Ser	Trp	Pro	Phe	Gln	Gln	Pro
			20					25					30		
Val	Asp	Ala	Lys	Lys	Leu	Asn	Leu	Pro	Asp	Tyr	His	Lys	Ile	Ile	Lys
		35					40					45			
Gln	Pro	Met	Asp	Met	Gly	Thr	Ile	Lys	Lys	Arg	Leu	Glu	Asn	Asn	Tyr
		50				55					60				
Tyr	Trp	Ser	Ala	Lys	Glu	Thr	Ile	Gln	Asp	Phe	Asn	Thr	Met	Phe	Asn
65					70					75					80
Asn	Cys	Tyr	Val	Tyr	Asn	Lys	Pro	Gly	Glu	Asp	Val	Val	Val	Met	Ala
				85					90					95	
Gln	Thr	Leu	Glu	Lys	Val	Phe	Leu	Gln	Lys	Ile	Glu	Ser	Met	Pro	
			100					105					110		

<210> 22
 <211> 109

<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 22

Asn Pro Ile Pro Lys His Gln Gln Lys His Ala Leu Leu Ala Ile Lys
1 5 10 15
Ala Val Lys Arg Leu Lys Asp Ala Arg Pro Phe Leu Gln Pro Val Asp
20 25 30
Pro Val Lys Leu Asp Ile Pro Phe Tyr Phe Asn Tyr Ile Lys Arg Pro
35 40 45
Met Asp Leu Ser Thr Ile Glu Arg Lys Leu Asn Val Gly Ala Tyr Glu
50 55 60
Val Pro Glu Gln Ile Thr Glu Asp Phe Asn Leu Met Val Asn Asn Ser
65 70 75 80
Ile Lys Phe Asn Gly Pro Asn Ala Gly Ile Ser Gln Met Ala Arg Asn
85 90 95
Ile Gln Ala Ser Phe Glu Lys His Met Leu Asn Met Pro
100 105

<210> 23
<211> 113
<212> PRT
<213> *Homo sapiens*

<400> 23

Lys Lys Gly Lys Leu Ser Glu Gln Leu Lys His Cys Asn Gly Ile Leu
1 5 10 15
Lys Glu Leu Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
20 25 30
Lys Pro Val Asp Ala Ser Ala Leu Gly Leu His Asp Tyr His Asp Ile
35 40 45
Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Glu Asn
50 55 60
Arg Asp Tyr Arg Asp Ala Gln Glu Phe Ala Ala Asp Val Arg Leu Met
65 70 75 80
Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
85 90 95
Met Ala Arg Lys Leu Gln Asp Val Phe Glu Phe Arg Tyr Ala Lys Met
100 105 110
Pro

<210> 24
<211> 113

<212> PRT
 <213> Homo sapiens
 <400> 24

Lys	Lys	Gly	Lys	Leu	Ser	Glu	His	Leu	Arg	Tyr	Cys	Asp	Ser	Ile	Leu	
1				5					10					15		
Arg	Glu	Met	Leu	Ser	Lys	Lys	His	Ala	Ala	Tyr	Ala	Trp	Pro	Phe	Tyr	
			20					25					30			
Lys	Pro	Val	Asp	Ala	Glu	Ala	Leu	Glu	Leu	His	Asp	Tyr	His	Asp	Ile	
		35					40					45				
Ile	Lys	His	Pro	Met	Asp	Leu	Ser	Thr	Val	Lys	Arg	Lys	Met	Asp	Gly	
	50					55					60					
Arg	Glu	Tyr	Pro	Asp	Ala	Gln	Gly	Phe	Ala	Ala	Asp	Val	Arg	Leu	Met	
65					70					75				80		
Phe	Ser	Asn	Cys	Tyr	Lys	Tyr	Asn	Pro	Pro	Asp	His	Glu	Val	Val	Ala	
			85					90						95		
Met	Ala	Arg	Lys	Leu	Gln	Asp	Val	Phe	Glu	Met	Arg	Phe	Ala	Lys	Met	
			100					105					110			

Pro

<210> 25
 <211> 113
 <212> PRT
 <213> Drosophila melanogaster
 <400> 25

Asn	Lys	Glu	Lys	Leu	Ser	Asp	Ala	Leu	Lys	Ser	Cys	Asn	Glu	Ile	Leu	
1				5					10					15		
Lys	Glu	Leu	Phe	Ser	Lys	Lys	His	Ser	Gly	Tyr	Ala	Trp	Pro	Phe	Tyr	
			20					25					30			
Lys	Pro	Val	Asp	Ala	Glu	Met	Leu	Gly	Leu	His	Asp	Tyr	His	Asp	Ile	
		35					40					45				
Ile	Lys	Lys	Pro	Met	Asp	Leu	Gly	Thr	Val	Lys	Arg	Lys	Met	Asp	Asn	
	50					55					60					
Arg	Glu	Tyr	Lys	Ser	Ala	Pro	Glu	Phe	Ala	Ala	Asp	Val	Arg	Leu	Ile	
65					70					75				80		
Phe	Thr	Asn	Cys	Tyr	Lys	Tyr	Asn	Pro	Pro	Asp	His	Asp	Val	Val	Ala	
			85					90						95		
Met	Gly	Arg	Lys	Leu	Gln	Asp	Val	Phe	Glu	Met	Arg	Tyr	Ala	Asn	Ile	
			100					105					110			

Pro

<210> 26

<211> 113
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 26

Lys Ser Lys Arg Leu Gln Gln Ala Met Lys Phe Cys Gln Ser Val Leu
 1 5 10 15
 Lys Glu Leu Met Ala Lys Lys His Ala Ser Tyr Asn Tyr Pro Phe Leu
 20 25 30
 Glu Pro Val Asp Pro Val Ser Met Asn Leu Pro Thr Tyr Phe Asp Tyr
 35 40 45
 Val Lys Glu Pro Met Asp Leu Gly Thr Ile Ala Lys Lys Leu Asn Asp
 50 55 60
 Trp Gln Tyr Gln Thr Met Glu Asp Phe Glu Arg Glu Val Arg Leu Val
 65 70 75 80
 Phe Lys Asn Cys Tyr Thr Phe Asn Pro Asp Gly Thr Ile Val Asn Met
 85 90 95
 Met Gly His Arg Leu Glu Glu Val Phe Asn Ser Lys Trp Ala Asp Arg
 100 105 110
 Pro

<210> 27
 <211> 108
 <212> PRT
 <213> *Homo sapiens*

<400> 27

Met Glu Met Gln Leu Thr Pro Phe Leu Ile Leu Leu Arg Lys Thr Leu
 1 5 10 15
 Glu Gln Leu Gln Glu Lys Asp Thr Gly Asn Ile Phe Ser Glu Pro Val
 20 25 30
 Pro Leu Ser Glu Val Pro Asp Tyr Leu Asp His Ile Lys Lys Pro Met
 35 40 45
 Asp Phe Phe Thr Met Lys Gln Asn Leu Glu Ala Tyr Arg Tyr Leu Asn
 50 55 60
 Phe Asp Asp Phe Glu Glu Asp Phe Asn Leu Ile Val Ser Asn Cys Leu
 65 70 75 80
 Lys Tyr Asn Ala Lys Asp Thr Ile Phe Tyr Arg Ala Ala Val Arg Leu
 85 90 95
 Arg Glu Gln Gly Gly Ala Val Val Arg Gln Ala Arg
 100 105

<210> 28
 <211> 113

<212> PRT
 <213> Homo sapiens
 <400> 28

Ser Glu Asp Gln Glu Ala Ile Gln Ala Gln Lys Ile Trp Lys Lys Ala
 1 5 10 15
 Ile Met Leu Val Trp Arg Ala Ala Ala Asn His Arg Tyr Ala Asn Val
 20 25 30
 Phe Leu Gln Pro Val Thr Asp Asp Ile Ala Pro Gly Tyr His Ser Ile
 35 40 45
 Val Gln Arg Pro Met Asp Leu Ser Thr Ile Lys Lys Asn Ile Glu Asn
 50 55 60
 Gly Leu Ile Arg Ser Thr Ala Glu Phe Gln Arg Asp Ile Met Leu Met
 65 70 75 80
 Phe Gln Asn Ala Val Met Tyr Asn Ser Ser Asp His Asp Val Tyr His
 85 90 95
 Met Ala Val Glu Met Gln Arg Asp Val Leu Glu Gln Ile Gln Gln Phe
 100 105 110
 Leu

<210> 29
 <211> 106
 <212> PRT
 <213> Gallus gallus
 <400> 29

Asn Leu Pro Thr Val Asp Pro Ile Ala Val Cys His Glu Leu Tyr Asn
 1 5 10 15
 Thr Ile Arg Asp Tyr Lys Asp Glu Gln Gly Arg Leu Leu Cys Glu Leu
 20 25 30
 Phe Ile Arg Ala Pro Lys Arg Arg Asn Gln Pro Asp Tyr Tyr Glu Val
 35 40 45
 Val Ser Gln Pro Ile Asp Leu Met Lys Ile Gln Gln Lys Leu Lys Met
 50 55 60
 Glu Glu Tyr Asp Asp Val Asn Val Leu Thr Ala Asp Phe Gln Leu Leu
 65 70 75 80
 Phe Asn Asn Ala Lys Ala Tyr Tyr Lys Pro Asp Ser Pro Glu Tyr Lys
 85 90 95
 Ala Ala Cys Lys Leu Trp Glu Leu Tyr Leu
 100 105

<210> 30
 <211> 112

<212> PRT
<213> Gallus gallus

<400> 30

Ser Ser Pro Gly Tyr Leu Lys Glu Ile Leu Glu Gln Leu Leu Glu Ala
1 5 10 15
Val Ala Val Ala Thr Asn Pro Ser Gly Arg Leu Ile Ser Glu Leu Phe
20 25 30
Gln Lys Leu Pro Ser Lys Val Gln Tyr Pro Asp Tyr Tyr Ala Ile Ile
35 40 45
Lys Glu Pro Ile Asp Leu Lys Thr Ile Ala Gln Arg Ile Gln Asn Gly
50 55 60
Thr Tyr Lys Ser Ile His Ala Met Ala Lys Asp Ile Asp Leu Leu Ala
65 70 75 80
Lys Asn Ala Lys Thr Tyr Asn Glu Pro Gly Ser Gln Val Phe Lys Asp
85 90 95
Ala Asn Ala Ile Lys Lys Ile Phe Asn Met Lys Lys Ala Glu Ile Glu
100 105 110

<210> 31
<211> 112
<212> PRT
<213> Gallus gallus

<400> 31

Thr Ser Phe Met Asp Thr Ser Asn Pro Leu Tyr Gln Leu Tyr Asp Thr
1 5 10 15
Val Arg Ser Cys Arg Asn Asn Gln Gly Gln Leu Ile Ser Glu Pro Phe
20 25 30
Phe Gln Leu Pro Ser Lys Lys Lys Tyr Pro Asp Tyr Tyr Gln Gln Ile
35 40 45
Lys Thr Pro Ile Ser Leu Gln Gln Ile Arg Ala Lys Leu Lys Asn His
50 55 60
Glu Tyr Glu Thr Leu Asp Gln Leu Glu Ala Asp Leu Asn Leu Met Phe
65 70 75 80
Glu Asn Ala Lys Arg Tyr Asn Val Pro Asn Ser Ala Ile Tyr Lys Arg
85 90 95
Val Leu Lys Met Gln Gln Val Met Gln Ala Lys Lys Lys Glu Leu Ala
100 105 110

<210> 32
<211> 113
<212> PRT
<213> Gallus gallus

<400> 32

Ser Lys Lys Asn Met Arg Lys Gln Arg Met Lys Ile Leu Tyr Asn Ala
1 5 10 15
Val Leu Glu Ala Arg Glu Ser Gly Thr Gln Arg Arg Leu Cys Asp Leu
20 25 30
Phe Met Val Lys Pro Ser Lys Lys Asp Tyr Pro Asp Tyr Tyr Lys Ile
35 40 45
Ile Leu Glu Pro Met Asp Leu Lys Met Ile Glu His Asn Ile Arg Asn
50 55 60
Asp Lys Tyr Val Gly Glu Glu Ala Met Ile Asp Asp Met Lys Leu Met
65 70 75 80
Phe Arg Asn Ala Arg His Tyr Asn Glu Glu Gly Ser Gln Val Tyr Asn
85 90 95
Asp Ala His Met Leu Glu Lys Ile Leu Lys Glu Lys Arg Lys Glu Leu
100 105 110

Gly

<210> 33

<211> 115

<212> PRT

<213> Gallus gallus

<400> 33

Lys Lys Ser Lys Tyr Met Thr Pro Met Gln Gln Lys Leu Asn Glu Val
1 5 10 15
Tyr Glu Ala Val Lys Asn Tyr Thr Asp Lys Arg Gly Arg Arg Leu Ser
20 25 30
Ala Ile Phe Leu Arg Leu Pro Ser Arg Ser Glu Leu Pro Asp Tyr Tyr
35 40 45
Ile Thr Ile Lys Lys Pro Val Asp Met Glu Lys Ile Arg Ser His Met
50 55 60
Met Ala Asn Lys Tyr Gln Asp Ile Asp Ser Met Val Glu Asp Phe Val
65 70 75 80
Met Met Phe Asn Asn Ala Cys Thr Tyr Asn Glu Pro Glu Ser Leu Ile
85 90 95
Tyr Lys Asp Ala Leu Val Leu His Lys Val Leu Leu Glu Thr Arg Arg
100 105 110

Glu Ile Glu
115

<210> 34

<211> 112

<212> PRT
 <213> Schizosaccharomyces pombe
 <400> 34

His Asn Ala Pro Phe Asp Lys Thr Lys Phe Asp Glu Val Leu Glu Ala
 1 5 10 15
 Leu Val Gly Leu Lys Asp Asn Glu Gly Asn Pro Phe Asp Asp Ile Phe
 20 25 30
 Glu Glu Leu Pro Ser Lys Arg Tyr Phe Pro Asp Tyr Tyr Gln Ile Ile
 35 40 45
 Gln Lys Pro Ile Cys Tyr Lys Met Met Arg Asn Lys Ala Lys Thr Gly
 50 55 60
 Lys Tyr Leu Ser Met Gly Asp Phe Tyr Asp Asp Ile Arg Leu Met Val
 65 70 75 80
 Ser Asn Ala Gln Thr Tyr Asn Met Pro Gly Ser Leu Val Tyr Glu Cys
 85 90 95
 Ser Val Leu Ile Ala Asn Thr Ala Asn Ser Leu Glu Ser Lys Asp Gly
 100 105 110

<210> 35
 <211> 113
 <212> PRT
 <213> Schizosaccharomyces pombe
 <400> 35

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
 1 5 10 15
 Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
 20 25 30
 Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
 35 40 45
 Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
 50 55 60
 Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
 65 70 75 80
 Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
 85 90 95
 Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
 100 105 110

Ser

<210> 36
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 36

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
1 5 10 15
Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
20 25 30
Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
35 40 45
Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
50 55 60
Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
65 70 75 80
Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
85 90 95
Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
100 105 110

Ser

<210> 37

<211> 114

<212> PRT

<213> Homo sapiens

<400> 37

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
1 5 10 15
Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
20 25 30
Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
35 40 45
Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
50 55 60
Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
65 70 75 80
Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Leu Ile Tyr
85 90 95
Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
100 105 110

Ile Glu

<210> 38

<211> 113

<212> PRT

<213> Gallus gallus

<400> 38

Ser Pro Asn Pro Pro Lys Leu Thr Lys Gln Met Asn Ala Ile Ile Asp
1 5 10 15
Thr Val Ile Asn Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu Val
20 25 30
Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu Leu
35 40 45
Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg Asn
50 55 60
His Lys Tyr Arg Ser Leu Gly Asp Leu Glu Lys Asp Val Met Leu Leu
65 70 75 80
Cys His Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Gln Ile Tyr Glu
85 90 95
Asp Ser Ile Val Leu Gln Ser Val Phe Lys Ser Ala Arg Gln Lys Ile
100 105 110

Ala

<210> 39

<211> 114

<212> PRT

<213> Gallus gallus

<400> 39

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
1 5 10 15
Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
20 25 30
Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
35 40 45
Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
50 55 60
Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
65 70 75 80
Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Val Ser Leu Ile Tyr
85 90 95
Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
100 105 110

Ile Glu

<210> 40

<211> 105

<212> PRT

<213> Homo sapiens

<400> 40

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
1 5 10 15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
20 25 30

Asp Ser Thr Phe Ser Leu Asp Gln Pro Gly Gly Thr Leu Asp Leu Thr
35 40 45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
50 55 60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
65 70 75 80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
85 90 95

Arg Phe Phe Glu Thr Arg Met Asn Glu
100 105

<210> 41

<211> 105

<212> PRT

<213> Mus musculus

<400> 41

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
1 5 10 15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
20 25 30

Asp Ser Thr Phe Ser Met Glu Gln Pro Gly Gly Thr Leu Asp Leu Thr
35 40 45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
50 55 60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
65 70 75 80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
85 90 95

Arg Phe Phe Glu Thr Arg Met Asn Asp
100 105

<210> 42

<211> 108

<212> PRT

<213> Mus musculus

<400> 42

Thr Lys Leu Thr Pro Ile Asp Lys Arg Lys Cys Glu Arg Leu Leu Leu
1 5 10 15

Phe Leu Tyr Cys His Glu Met Ser Leu Ala Phe Gln Asp Pro Val Pro
20 25 30

Leu Thr Val Pro Asp Tyr Tyr Lys Ile Ile Lys Asn Pro Met Asp Leu
35 40 45

Ser Thr Ile Lys Lys Arg Leu Gln Glu Asp Tyr Cys Met Tyr Thr Lys
50 55 60

Pro Glu Asp Phe Val Ala Asp Phe Arg Leu Ile Phe Gln Asn Cys Ala
65 70 75 80

Glu Phe Asn Glu Pro Asp Ser Glu Val Ala Asn Ala Gly Ile Lys Leu
85 90 95

Glu Ser Tyr Phe Glu Glu Leu Leu Lys Asn Leu Tyr
100 105

<210> 43

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic bromodomain peptide

<220>

<221> Xaa

<222> (1)..(1)

<223> Xaa can be any single amino acid

<220>

<221> Xaa

<222> (2)..(2)

<223> Xaa can be any single amino acid

<220>

<221> Xaa

<222> (4)..(6)

<223> Xaa is a maximum of three amino acids. Each of these can be any amino acid. One may be missing.

<220>

<221> Xaa

<222> (6)..(13)

<223> Xaa is a maximum of eight amino acids. Each of these can be any amino acid. One, two, or three may be missing.

<220>

<221> Xaa

<222> (7)..(7)

<223> Xaa is a single amino acid that can be Pro, Lys, or His.

<220>
 <221> Xaa
 <222> (8)..(8)
 <223> Xaa is a single amino acid that can be any amino acid.

<220>
 <221> Xaa
 <222> (10)..(10)
 <223> Xaa is a single amino acid that can be a Tyr, Phe, or His.

<220>
 <221> Xaa
 <222> (11)..(15)
 <223> Xaa is five amino acids. Each of these can be any amino acid.

<220>
 <221> Xaa
 <222> (13)..(13)
 <223> Xaa is a single amino acid that can be Met, Ile, or Val.

<400> 43
 Xaa Xaa Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Asp
 1 5 10 15

<210> 44
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic bromodomain peptide

<400> 44
 Trp Pro Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr
 1 5 10 15
 Glu Val Ile Arg
 20